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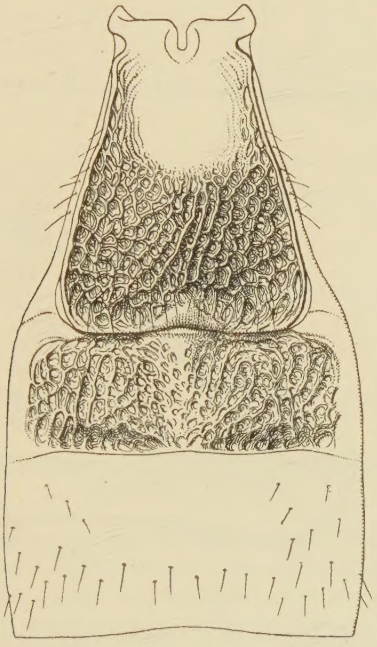
ON TWO NEW PALAEARCTIC SPECIES OF *APANTELES* (HYM., BRAC.)

By D. S. Wilkinson, F.R.E.S.

(*Imperial Institute of Entomology.*)

The two species that I am describing here as new will not agree, so far as I am aware, with any *Apanteles* description published subsequently to Marshall's works; nor will they compare with any of the numerous types and cotypes that I have been able to examine, which I am studying in the preparation of my monograph of the palaearctic species of this genus, and which are scattered about in private collections, numerous Continental Museums and Institutions, the British Museum, and in Tokyo and Washington. These species are published now not only to make the names available for my many kind correspondents, to whom I am considerably indebted, but especially to preclude the necessity of describing them as new, later, in the monograph.



1

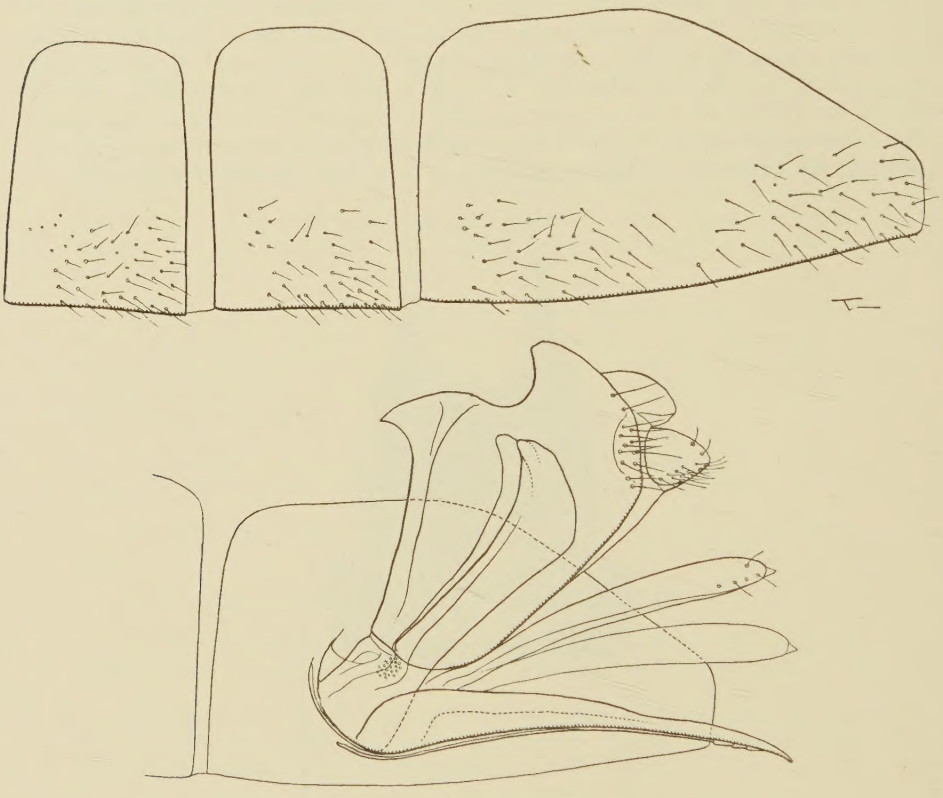
Fig. 1.—*Apanteles melitaearum* sp. n.; basal tergites, ♀. × *c.* 80.

Apanteles melitaearum sp. n.

Apanteles spurius Wesmael, Bignell, 1901, *Trans. Devon. Ass. Sci.*, **33** : 671 (*partim*).
Apanteles vestalis Haliday, Lyle, 1916, *Entomologist*, **49** : 161.

♀. Very variable in colour. Black; in the lightest specimens the costal veins, basal ventrites, four anterior femora, hind femora (save for some darkening apically), all trochantines (but not trochanters), all tibiae, and all tarsi (except for the apical tarsal joint which is darkened and for the black feet), red testaceous; darker specimens have the middle

femora with some darkening, and the hind femora more extensively darkened, particularly above, or even darkened throughout; in the darkest specimens the front femora are black both in the basal half and above throughout, and the middle and hind femora and all trochanters and trochantines are black, while in addition certain darkening is noticeable on the apices of the hind tibiae and of the hind tarsal joints, and the ventrites are darkened or black throughout; palpi and tibial spurs pale; wings more or less hyaline, but sometimes quite distinctly infumated, the setae of the fore-wings coloured, of the hind-wings apparently white save towards apex; wing-veins, stigma, and metacarp brown, save that the veins (apart from the costa) in the basal portion of the wing are colourless; stigma uniformly opaque.



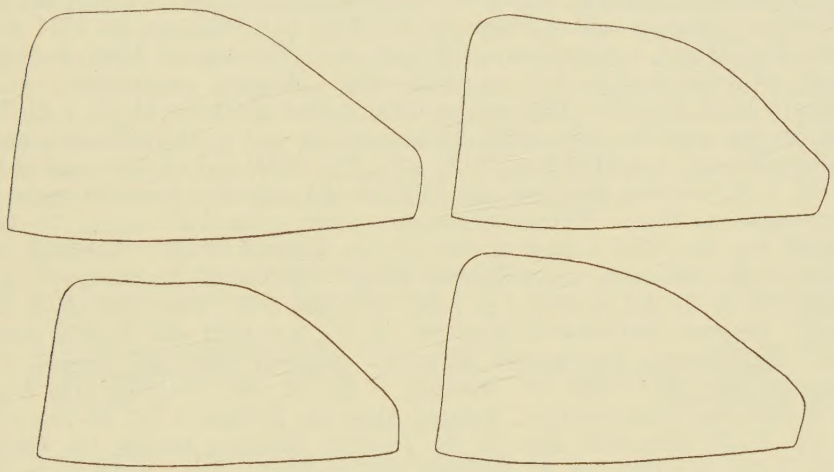
2

Fig. 2.—*Apanteles melitaearum* sp. n.; apical ventrites and, below, genitalia, side view, ♀. × *c.* 80.

♂. Very variable in colour, but always darker than the ♀. Black; in the lightest specimens the basal ventrites, the apical half of the front femora, and possibly the extreme apex of the middle femora, red testaceous, the four anterior femora together with their trochanters and trochantines otherwise darkened or even strongly darkened; all tibiae and tarsi red testaceous save for black feet and for the apical tarsal joint being slightly darkened; hind femora very strongly darkened or black, but often with a small testaceous area at extreme base and with their trochantines somewhat testaceous; in the darkest specimens the basal half of all tibiae is red testaceous, the tibiae otherwise, together with all tarsi, darkened or strongly darkened, as are also the basal ventrites; the legs otherwise

black throughout; palpi and tibial spurs pale; wings hyaline, the setae apparently white, but a few specimens with wings quite distinctly infumated and the setae apparently coloured; wings otherwise as in ♀.

♀♂. *Head*: face throughout regularly punctate (degree 3); facial depressions clearly nearer to apex of clypeus than to the eyes; frons and vertex punctate, but neither so strongly (degree 2), regularly, nor closely as the face; frontal orbits punctate (degree 3), commonly so closely punctate as to be more rightly describable as minutely rugose; posterior ocelli about equidistant from each other and the eyes; flagellum of ♀ sometimes (but rarely) equal in length to, usually shorter than, sometimes noticeably shorter than, combined length of thorax and abdomen, of ♂ just a little longer than or about equal to combined length of head, thorax, and abdomen. *Thorax*: mesonotum along the lines of the notauli, narrowly down a medial longitudinal line, and in a large area into which these converge and which occupies at least half of the posterior half of the mesonotum, the anterior margin, and the lateral margins, rugose (or rugoso-punctate) and dull, otherwise shining and with separated strong punctation (degree 3 or 4), narrowly across posterior margin shining and



3

FIG. 3.—*Apanteles melitaearum* sp. n.; some hypopygia, side view, ♀, to show variation. × *c.* 64.

entirely smooth; scutellar sulcus strongly crenulate; disc of scutellum throughout punctate, commonly strongly punctate (degree 4), or even often rugoso-punctate; propodeon strongly, coarsely reticulately rugose, and commonly with transverse basal carinae and a sunken median longitudinal carina much in evidence. *Wings*: venation rather variable, even in the same series, but the 1st abscissa of the radial always angled with, and more usually about equal in length to, the transverse cubital, and the upper portion of the basal vein more usually very short. *Legs*: hind coxae rugose; hind tibial spurs equal in length, about half the length of the basal joint of the hind tarsus. *Abdomen* (figs. 1–3): 1st tergite at base strongly excavated, medianly quite strongly tumescent and commonly with some sort of short median longitudinal carina, apically turned over, shining and more or less smooth in the excavated basal portion, otherwise rugose; 2nd tergite rugose throughout, but not so strongly or definitely as the 1st tergite, its sulci obsolete to wanting; 3rd tergite smooth, in ♀ in each lateral fourth with some exceedingly minute, widely-spaced punctation, and with a single row of such punctures transversely across the apex of about the basal three-fifths, in the ♂ with such punctures more extensively placed so that the major portion

of each lateral two-fifths and of the apical half of the tergite is thus punctate, all this punctation, however, very variable in extent and quantity so that the ♀ often has but the transverse row of punctures and the ♂ often the whole of the basal half of the tergite smooth and with only one row of punctures across in the apical half medianly to join what remain of the lateral punctures; succeeding tergites with the usual minute punctation; ventrites without median longitudinal suture; ovipositor sheaths just a little longer than the basal joint of the hind tarsus; hypopygium large, prominent, its apex cut away to form a lower-posterior margin.

Length, 2·5–3·5 mm.

England
Ireland
Germany
France
Spain.

Described from the following material:—British Museum: Marshall collection, a card of five (4 ♀♀, 1 ♂), 5.vi.1883, Bignell reg. no. 1767, under which number the parasite is recorded as *spurius* Wesm. Lyle collection, Dry Sandford, Berks, a card of two (1 ♀, 1 ♂), May 1911, ser. no. 1189 (*G. T. Lyle*), Dry Sandford, Berks, a card of fifteen (15 ♂♂), 6.vi.1911, ser. no. 1283 (*G. T. Lyle*), Co. Fermanagh, Ireland, a card of thirteen (13 ♂♂), 7.vi.1914, ser. no. 2547 (*Robertson*), Bude, a card of fifteen (14 ♀♀, 1 ♂), 16.v.1915, ser. no. 2717 (*G. T. Lyle*), I. of Wight, a card of two (1 ♀, 1 ♂), 14.v.1920, ser. no. 4280 (*B. S. Harwood*), all determined by Lyle as *vestalis* Hal. Bignell collection: a card of six (4 ♀♀, 2 ♂♂), 22.v.1883, reg. no. 1350, a card of fifteen (14 ♀♀, 1 ♂), June 6th, no reg. number, both series determined as, and in the collection under, *spurius* Wesm.; a card of four (3 ♀♀, 1 ♂), 17.v.1883, and another card of four (3 ♀♀, 1 ♂), *undated*, both reg. no. 1350, in the collection reversed under the name *adjunctus* Nees. Fitch collection: a card of six (3 ♀♀, 3 ♂♂), 17.v.1883, Bignell reg. no. 1350, a card of two (2 ♀♀), *undated* (*F. W. Frohawk*), both series in the collection under *spurius* Wesm. Harwood collection: I. of Wight, 21 ♀♀, 11 ♂♂, iv.1920, 1 ♀, 3 ♂♂, 8.iv.1920, 5 ♀♀, 20.iv.1920 (*B. S. Harwood*). Oxford University Museum: 15 ♀♀, 9.vi.1923, det. Lyle as *vestalis* Hal. Manchester University Museum: England, Hod Hill, Dorset, 7 ♀♀ (one the *type*), 22.vi.1934 (*W. Buckley*), 3 ♂♂, 28 and 29.v.1935 (*Dr. Hope*). A. W. Stelfox's collection: Ireland, Athy, Co. Kildare, 5 ♂♂, 18–19.v.1933, 10 ♀♀, 3 ♂♂, 23.v.1933 (*Rev. K. M. Dunlop*), Kilcarry Bridge, Co. Carlow, 5 ♀♀, 2 ♂♂, 21.v.1934 (*A. W. Stelfox*); Isle of Wight, 2 ♀♀, 2 ♂♂, 17.iv.1933 (*M. S. D. Westropp*). Zoologisches Museum der Universität, Berlin: Leipzig, 3 ♀♀, 3 ♂♂, 1.v.1893 (*Dr. R. Krieger*); Berlin, 11 ♀♀, 22.vi.1901 (*Dr. G. Enderlein*), 11 ♀♀, 1 ♂, 30.v.1913 (*Ude*). Zoologisches Museum, Hamburg: Spain, Barcelona, 5 ♀♀, 1 ♂, 1927. A. C. W. Wagner's collection: Germany, "Niendf a/O," 6 ♂♂, vi.1901, det. Konow as *tenebrosus* Wesm.; Hamburg, 2 ♂♂, 16.iii.1921. Imperial Institute of Entomology: France, Bordeaux, 1 ♀, 2 ♂♂, vi.1933 (*J. Suire*).

Type deposited in the British Museum.

Host. The series from which I have selected the type is recorded to have been bred from the Nymphalid butterfly *Melitaea aurinia* Rott., and from this host are recorded the following series also: the three males from Hod Hill; the Lyle material serial nos. 1189, 1283, and 2717; the cardful of fifteen and the two cards of four specimens each, from the Bignell collection; the two specimens bred by Frohawk in the Fitch collection; the fifteen females from the Oxford Museum; all the material from Ireland; the six specimens from Leipzig; and the six males from the Wagner collection dated 1901. In addition, the card of five in the Marshall collection, the Lyle series numbered 2547, the Bignell card of six numbered 1350 and also of course the Fitch cardful of six with the Bignell number 1350, are recorded to have been bred from *M. artemis*

Hübn., a name now sunk under *aurinia*. The two males from Hamburg are recorded from *M. maturna* L., and the series from Barcelona from *M. iberica* Ob., while the material from Bordeaux is simply recorded from a species of *Melitaea*. The remainder of the material from which I have described this species is recorded to have been bred from *M. cinxia* L.

Cocoons white, held loosely together on or around the host larva by strands of white silk.

This species that I have here described as new, and which was known to Lyle, was considered by this author to be *vestalis* Hal., and thus referred to. This determination is unquestionably incorrect, however, since the tegulae of *vestalis* are described in the original description as ferrugineous. The Marshall, Fitch, and part of the Bignell, material of this new species was determined as *spurius* Wesm. This again is unquestionably a misdetermination; I know *spurius*, having myself examined the type of this species in Brussels. *Apanteles melitaearum* is of course close to *simulans* Lyle, in many respects, but it is not this species, being immediately separable on the size and shape of the hypopygium. *A. melitaearum* runs in Marshall's key of the European species to couplet 8, but it is clearly not referable either to *ordinarius* or to *congestus*.

In my key (1932, *Trans. ent. Soc. Lond.*, **80**) *A. melitaearum* runs to couplet 71, which should be altered, as below. I am including in this revised, extended couplet another species new to my key, *A. villanus* Reinh. This latter I have just recently studied and written up for my monograph, and, since it also runs to couplet 71, it should obviously be included at this time.

71. Hind coxae rugose and dull . . . . . 71*a*.
Hind coxae shining, at most closely punctate . . . . . 72.
71*a*. Tegulae red testaceous; Cosmopolitan . . . . . *ruficrus* Hal.
Tegulae black . . . . . 71*b*.
71*b*. Hypopygium at apex slightly acute; Europe . . . . . *villanus* Reinh.
Hypopygium at apex cut away to form a lower-posterior margin; Europe . . . . . *melitaearum* Wilkn.

Apanteles leucaniae sp. n.

♀. Black; the four anterior legs (save for the feet, and for some darkening at the base of the coxae occasionally), the hind trochanters and trochantines, hind femora (save for a black spot at extreme apex above), hind tibiae (save for some darkening at extreme apex), all tibial spurs, palpi, tegulae, lateral membranous margins of the basal tergites, the 3rd tergite extensively, the 4th tergite in the lighter specimens almost wholly, the 5th tergite in the lighter specimens extensively, and all ventrites, red testaceous; hind coxae red testaceous at apex, in the lighter specimens in as much as the apical fourth above and the apical third (or even sometimes half) below, in the darker specimens only at extreme apex above and in the apical fourth below, or even entirely black; hind tarsi throughout darkened, and the hind feet black; scape sometimes distinctly red testaceous or even pale red testaceous, especially below, more usually, however, coloured as the flagellum, dark red-brown to black; in dark specimens the 4th and 5th tergites black; wings evenly throughout quite strongly infumated, and the setae coloured; stigma, wing-veins, and metacarp, uniformly brown; stigma uniformly opaque.

♂. Agrees with colour description of the darker ♀♀, the hind coxae being largely black, or red testaceous only at apex, and the tergites with but little, if any, red testaceous colouring and the apical ventrites with none.

♀♂. *Head* broader than mesonotum; face and clypeus punctate (degree 3); facial depressions rather nearer to apex of clypeus than to the eyes; frons and vertex minutely

punctate (degree 1); posterior ocelli nearer to each other than to the eyes; flagellum of ♀ with length equal to or rather shorter than the combined length of thorax and abdomen, of ♂ equal to or rather longer than combined length of thorax and abdomen together with twice the length of the head. *Thorax* to some extent compressed dorso-ventrally; mesonotum, disc of scutellum, and propodeon anteriorly, more or less on the same plane; mesonotum punctate, the punctures strong (degree 4) and, save along the lines of the notauli, well separated; the lines of the notauli anteriorly, and the anterior margin of the mesonotum, rugoso–punctate; the punctures on the lines of the notauli posteriorly commonly much obscured by minute rugae; the mesonotum broadly right across the posterior margin entirely smooth, save for an occasional minute puncture; disc of scutellum highly polished and entirely smooth, save for some few very widely separated, exceedingly minute punctures; propodeon strongly, coarsely, reticulately rugose, and often with secondary sculpture, and

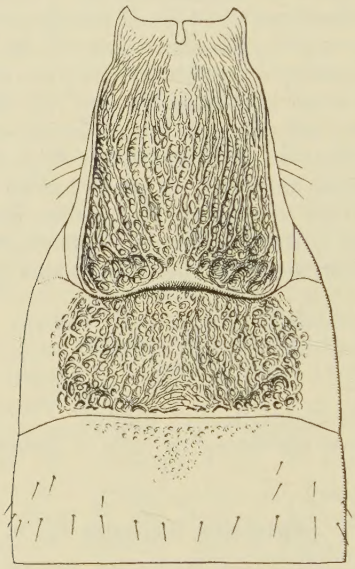


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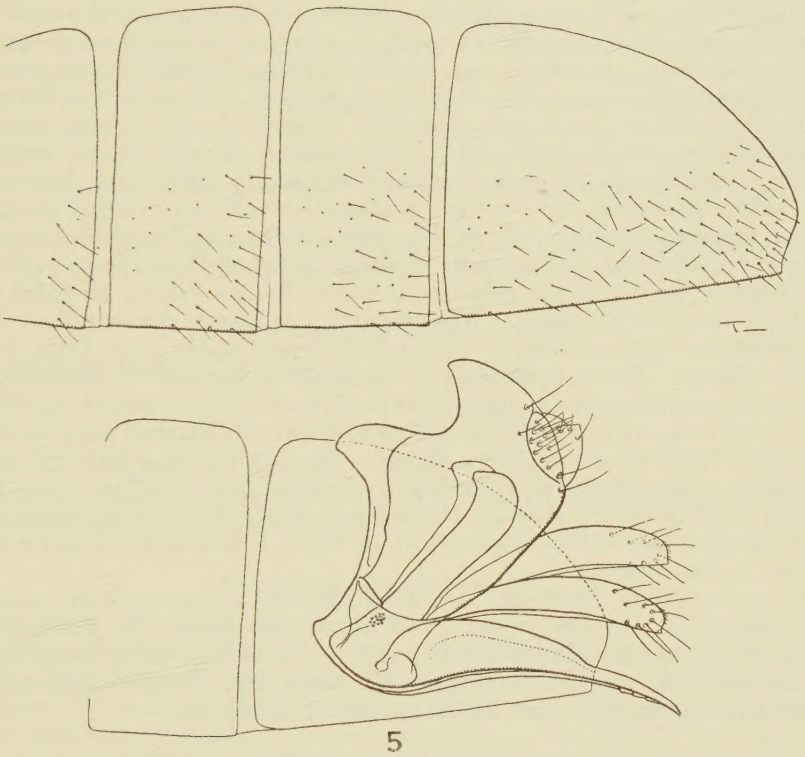
Fig. 4.—*Apanteles leucaniae* sp. n.; basal tergites, ♀. × *c.* 80.

usually with a large area which occupies about the median fourth of its basal third (or even sometimes basal half), this area being distinctly sunken, more or less devoid of major rugosities and therefore more shining than the remainder of the propodeon, and more usually throughout its length with a median longitudinal carina which is as strong as or stronger than, and which rises level with or even higher than, any other rugosity or carina on the propodeon; in many examples, however, this sunken area is not particularly noticeable, and again in some others the median longitudinal carina in the sunken area is weak. *Wings*: 1st abscissa of radial angled with, and about equal in length to, or shorter than, the transverse cubital. *Legs*: hind coxae shining, basally above with some well separated, commonly strong punctation (degrees 3 and 4), apically above longitudinally striate, on outer faces with much, more or less longitudinal aciculation, fine striation, or occasionally even minute rugosities, but in smaller and more weakly sculptured examples the outer faces have but obsolete sculpture or are only minutely punctate; the hind tibial spurs more or less subequal, the longer spur rather less than half the length of the basal joint of the hind tarsus. *Abdomen* (figs. 4, 5): 1st tergite excavate basally, weakly tumescent medianly, weakly

turned over apically, throughout longitudinally rugose; 2nd tergite rugose, without lateral sulci; 3rd tergite with some obsolete rugosity medianly at base, otherwise entirely smooth save for a single transverse row of exceedingly minute punctures across the base of about the apical third, and for some few other such punctures laterally, in the ♂ these punctures perhaps rather more numerous, and the setae perhaps rather longer, than in the ♀; succeeding tergites entirely smooth save for a single transverse row of exceedingly minute punctures; ventrites without median longitudinal suture; ovipositor sheaths equal in length to the basal joint, and the ovipositor to the combined length of the two basal joints, of the hind tarsus; hypopygium strongly rounded apically, perhaps even with apex cut away to form a lower-apical margin.

Length, 2·25–2·75 mm.



5

FIG. 5.—*Apanteles leucaniae* sp. n.; apical ventrites and, below, genitalia, side view, ♀. × *c.* 80.

Described from the following material:—ZOOLOGISCHES MUSEUM DER UNIVERSITÄT, BERLIN: Berlin, 4 ♀♀, 13 ♂♂, 29.vi.1901, 2.vii.1901 (*Ude*); 11 ♀♀, 4 ♂♂, 10.ix.1901 (*Ude*). IMPERIAL INSTITUTE OF ENTOMOLOGY: England, Suffolk, Lowestoft, 37 ♀♀, 4 ♂♂, ix.1935, Suffolk, 41 ♀♀ (one the *type*), 4 ♂♂, 1936 (*P. J. Burton*); Dymchurch, a card of six (4 ♀♀, 2 ♂♂), *undated* (*G. V. Bull*).

Type deposited in the British Museum.

Host. The material dated June and July, 1901, is recorded to have been bred from the Agrotid, *Leucania straminea* Treits., and Dr. Bull's six specimens from, it is believed, *L. pallens* L.; all the remainder of the material from which

I have described this new species is recorded to have been bred from *L. obsoleta* Hübn.

Cocoons white, with quantities of white silk in a fluffy mass inside the stem of the cane.

This new species should, I am convinced, certainly be referred to my Group G. This group, however, although very convenient, is unquestionably not very well defined, or at least not so well defined as my other groups in the genus. Consequently I have taken especial care in my examination of other, related species, and particularly with those recorded as parasitic on cane-infesting species of Noctuids. *Apanteles leucaniae* is very similar, in many respects, to *A. marginiventris* Cresson (= *A. grenadensis* Ashm., and *harnedi* Vier.), a parasite of *Cirphis*: but the differences in the nature of the punctation on the mesonotum, and quite a marked difference in the shape of the heads, are characters in themselves sufficient easily to separate the two species. A very much closer match, however, is *A. laeviceps* Ashm., another species recorded from *Cirphis*. Here, the shape of the 1st tergite, and, again, a marked difference in the shape of the heads, are characters whereby *leucaniae* may easily be separated from its American ally. Yet another, closely related American species recorded from the same host is *A. rufocoxalis* Riley; but here, apart from other characters, the venation is altogether different. Other American species recorded from *Cirphis* or *Leucania* are *flaviconchae* Riley, which is easily distinguishable, and *militaris* Walsh, and *forbesi* Vier., which belong to other, distinct groups of the genus, as does also *belliger* Wilkn., recorded from the Army Worm in Mauritius. What we are all calling *Apanteles ruficrus* Hal., and which has been recorded by me, in 1929, from *Cirphis loreyi* Dup., is also closely related. This is apparently a cosmopolitan parasite of Noctuids, but is, however, immediately distinguishable from *leucaniae* by means of its strongly rugose hind coxae and strongly punctate scutellum. In Marshall's key *leucaniae* runs fairly easily to *analis* (Nees), Marsh. The material that Marshall had of this latter is admittedly very similar to *leucaniae*, but it differs, apart from various other, more or less minor characters, notably in not being flattened as is my species; and all the other species to which I have referred above differ likewise in this respect.

In my key (1932, *Trans. ent. Soc. Lond.*, **80**, and as subsequently emended, 1934, *Stylops*, **3**: 155–156; 1936, *Proc. R. ent. Soc. Lond.*, (B) **5**: 85–86) *A. leucaniae* is to be referred to Group G; and, in view of the variable length of the 1st abscissa of the radial, to both sides of couplet 204. Couplets 206 and 212, to which it subsequently runs, should be altered as follows :—

206. Hypopygium strongly rounded apically, perhaps even with apex cut away to form a lower-apical margin; Europe . . . *leucaniae* Wilkn.
Hypopygium not rounded apically . . . . . 206*a*.
206*a*. Propodeon in at least basal half with median longitudinal carina; mesonotum red testaceous; Europe . . . . . *ferrugineus* Marsh.
Propodeon without such carina; mesonotum black . . . . . 207.

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212. Propodeon coarsely, reticulately rugose; Europe. . . *leucaniae* Wilkn.
Propodeon with areola . . . . . 212*a*.
212*a*. Second tergite of female with its discal sulci equal to or longer than its basal breadth; Uganda . . . . . *afer* Wilkn.
Second tergite of female with its basal breadth twice or approaching twice length of its discal sulci; West Indies . . . *diatraeae* Mues.

CERATOPOGONIDAE (DIPTERA) FROM ETHIOPIA AND BRITISH SOMALILAND

By J. W. S. Macfie, M.A., D.Sc., M.B., Ch.B., F.R.E.S.

This small collection of midges was made by me when I was a member of the British Ambulance Service in Ethiopia. Most of the specimens were taken at lamps, either in my own tent, or in our mess tent. The collection consists of 43 specimens, 38 taken in Ethiopia, and 5 in British Somaliland. It includes 17 different species, 4 of which (all from Ethiopia) appear to be new. The majority of the specimens collected in Ethiopia were taken at Addis Ababa (*c.* 7500 ft.), Dessie (*c.* 9000 ft.), Waldia (*c.* 5800 ft.), and at the ford over the Alamata river at the foot of the escarpment near the plain of Ashanghi. They include species of *Forcipomyia* (4), *Atrichopogon* (2), *Culicoides* (2), *Dasyhelea* (5), and *Stilobezzia* (1). It is noteworthy that most of them are well known and widely distributed African forms. With the exception of 4 species described by Kieffer (1918) they are, I think, the first to be recorded from this country. All the three species from British Somaliland were taken at Berbera, and are already known.

The unit referred to in the descriptions is 3·7 μ. All the types of new species are in the collection of the British Museum (Natural History).

Forcipomyia biannulata I. & M.

Ethiopia : Waldia, 16–31.i.1936, 1 ♀. In tent.

Forcipomyia ingrami Carter.

British Somaliland : Berbera, 5–9.xii.1935, 2 ♀♀.

These specimens are probably *F. ingrami*, but as both are damaged females the determination requires confirmation.

Forcipomyia lasionota (Kieff.).

Ethiopia : Dire Daua, 25.iv.1936, 1 ♂.

This insect probably belongs to the species from the Seychelles for which Kieffer (1911) proposed the name *Ceratopogon lasionotus*. It resembles in many ways *F. castanea* (Walk.), but the wings show no pale spot, and the narrow sepia band adorning the hind femora is at the apex of the segment. Other characters that may be noted are as follows : There are no scales so far as I can see. Length of wing, about 1·6 mm. Fork of *Cu* at about same level as end of costa. Legs unadorned excepting hind femora. T.R. about 0·9. Hypopygium almost identical with that of *F. castanea*.

Forcipomyia lepidota I. & M.

Ethiopia : Dessie, 18.xii.1935–15.i.1936, 1 ♀; Waldia, 16–31.i.1936, 1 ♂, 1 ♀, and 1–26.ii.1936, 1 ♂. In tents.

Forcipomyia alamatae sp. n.

A small brown species without scales, with unadorned wings and legs, and T.R. 0·6–0·7.

♀. Length of wing, about 1·2 mm.; greatest breadth, about 0·46 mm.

Head dark brown. Palpi brown : third segment slightly inflated at base, with a shallow depression from which arise sensory hairs, fourth and fifth fused; length of third segment slightly greater than length of fourth and fifth combined. Antennae darkish brown, very little change of shape between segments 10 and 11 : segments 4–10 somewhat flask-shaped, from about 13 by 8 to 14 by 7 units, armed with slender tapering spines about as long as the segments; 11–14 rather less flask-shaped, sub-equal, about 17 by 7 (maximum) units; 15 about 25 (including stylet of about 2 units) by 6 units. The combined lengths of segments 3–10, 4–10, and 11–15 about 112, 98, and 93 units respectively. *Thorax* brown, with the usual scutal bands a darker brown. Scutellum darkish brown. *Wings* unadorned, without scales. Costa extending less than half length of wing. First radial cell obliterated; second quite small, slit-like. Fork of *Cu* distal to level of end of costa. Halteres with whitish knobs. *Legs* brown or yellowish-brown, unadorned, without either scales or lanceolate spines. T.R. 0·6–0·7. *Abdomen* darkish brown, cerci pale brown. No scales. Spermathecae two, rather feebly chitinised, large, sub-equal, oval, about 95 μ by 75 μ : the duct not chitinised.

Ethiopia : Alamata ford, 1.iii.1936, 1 ♀.

In the key to the African species of *Forcipomyia* given by Ingram and Macfie (1924) this insect fits near *F. radiifer* (Kieff.) a species taken at Pretoria in South Africa, and described by Kieffer in 1918. In *F. radiifer*, however, the wing is adorned with a pale spot at the end of the costa which is not present in this insect.

Atrichopogon hirsutipennis I. & M.

Ethiopia : Waldia, 16–31.i.1936, 1 ♂. In tent.

This rather large and blackish specimen is probably correctly referred to *A. hirsutipennis*, but the identification requires confirmation after the examination of females.

Fig. 1.—*Atrichopogon stannusi* I. & M. Ventral view of hypopygium of male.

Atrichopogon stannusi I. & M.

Ethiopia : Waldia, 1–26.ii.1936, 2 ♂♂, 4 ♀♀, and one intersex form; and Alamata ford, 1.iii.1936, 1 ♀.

These are brown or dark brown insects with hairy eyes, an almost black

patch on the scutum immediately anterior to the scutellum, yellowish-brown scutellum and legs, and a T.R. slightly less than 3. Some of the specimens are darker than others, but I do not think they are specifically distinct. The colour is due in part to a pale substance (soluble in KOH) shining through the cuticle, and varies to some extent with its abundance. The females correspond well with the description of *A. stannusi*, an African (Gold Coast and Nyasaland) insect of which only females are known, and the Ethiopian specimens are therefore referred to this species. Bearing in mind the difficulty of determination in the genus, this identification should be regarded as provisional until males from the Gold Coast and Nyasaland have been examined and compared with the Ethiopian specimens. The abnormal specimen is predominatingly feminine, but the basal segments (4–10) of the antennae bear whorls of hairs. The distinctive characters of the male are as follows :—

♂. Wings rather longer and narrower than in the female : length about 1·5 mm., greatest breadth about 0·4 mm.

Head very dark brown. Eyes hairy. Palpi darkish brown : third segment only very slightly inflated, with a very small pit ; lengths of last three segments about 14, 11, and 10 units respectively. Antennae darkish brown : segments 4–11 sub-equal in length but successively narrowing from about 15 by 11 to 15 by 8 units, each bearing a whorl of hairs ; 12 longer, about 22 units, also with a whorl ; 13–15 more elongate, without whorls, about 40, 32, and 48 (including stylet of about 8 units) by 6 units respectively. *Thorax* with scutal adornment as in female. Scutellum yellowish-brown, bearing two lateral and two centro-marginal bristles, and 2–3 small hairs. *Wings* unadorned, yellowish at base. No macrotrichia. Venation much as in female, but anterior ramus of *Cu* extending beyond level of end of costa. As in female petiole of *M* shorter than cross-vein, and angle between branches of *Cu* less than a right angle. Halteres with white or cream-coloured knobs. *Legs* almost uniformly yellowish-brown, but terminal tarsal segments somewhat infuscated. Form of segments, claws, and empodium normal. T.R. about 2·7. *Abdomen* darkish brown. Hypopygium in ventral view as shown in the figure (fig. 1). Ninth sternite irregularly excavated in the middle line posteriorly ; bearing a single transverse row of 8 bristles. The form of the claspers is perhaps the most characteristic feature.

Culicoides inornatipennis C.I. & M.

British Somaliland : Berbera, 5–9.xii.1935, 1 ♀.

This specimen, which is damaged, agrees well with typical examples of *C. inornatipennis* excepting that the macrotrichia on the wings are fewer, none being present at the base between the fourth and fifth veins.

Culicoides kingi Aust.

British Somaliland : Berbera, 5–9.xii.1935, 2 ♀♀.

These insects appear to belong to the same species as those taken by Mr. H. H. King at Khor Arbat, Red Sea Hills, for which Austen (1912) proposed the name *C. kingi*. As pointed out by Austen the adornment of the wings resembles that of *C. schultzei* (End.). The difference most easily appreciated is perhaps the arrangement of the pale areas in the neighbourhood of the fork of the fifth vein. If these specimens are correctly determined as *C. kingi*, then Austen's description of the venation is not quite correct, for there are in fact two radial cells as is usual (not one only as shown in Austen's figure), the first being almost obliterated.

Culicoides milnei Aust.

Ethiopia : Addis Ababa, iv.1936, 1 ♀.

This species resembles closely *C. austeni* C.I. & M. It is larger, however, the eyes are separated above, the wings bear fewer macrotrichia, the second radial cell is wider, and the two distal pale areas at the anterior border of the wing are wider apart.

Culicoides pulicaris (L.).

Ethiopia : Addis Ababa, iv.1936, 2 ♀♀; Dessie, 28.xii.1935 to 15.i.1936, 2 ♂♂, 2 ♀♀; and Waldia, 16–31.i.1936, 1 ♀.

These specimens do not appear to differ at all from European specimens. The genitalia of the males are apparently identical.

Dasyhelea nigricans C.I. & M.

Ethiopia : Waldia, 1–26.ii.1936, 1 ♂.

Dasyhelea flava C.I. & M.

Ethiopia : Afdem, 25.iv.1936, 1 ♂, 1 ♀.

These specimens are very dark brown, almost black, but otherwise do not differ from West African specimens of *D. flava*.

Dasyhelea sp.

Ethiopia : half-way between Addis Ababa and Dessie, 26.iii.1936, 1 ♀.

This is a dark brown insect with yellowish-brown shoulder areas and scutellum. The scutellum bears two lateral, and four centro-marginal bristles. As in the genus *Dasyhelea* the chief diagnostic characters are found in the males the identification of this specimen is at present not possible.

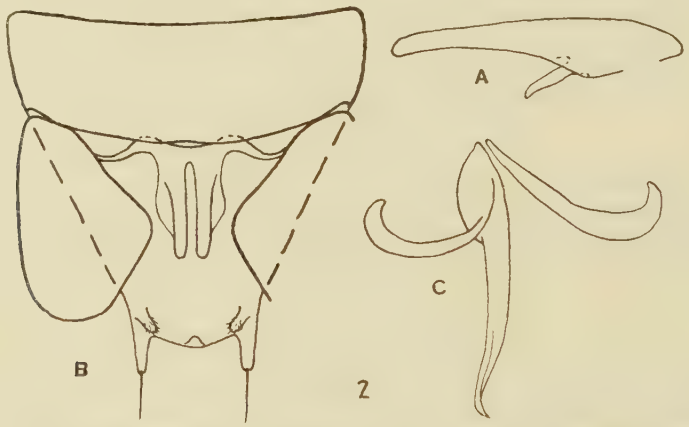

Fig. 2.—A, *Dasyhelea dehalperti* sp. n., clasper of male. B and C, *Dasyhelea waldiae* sp. n., parts of hypopygium of male seen in ventral view.

Dasyhelea dehalperti sp. n.

An almost black species, with the scutellum yellow, and the halteres with white knobs.

♂♀. Length of wing, about 1·3–1·4 mm.; greatest breadth, about 0·4–0·5 mm. In the male the wings are as usual longer and narrower than in the female.

Head almost black. Eyes hairy. Palpi dark brown, long and slender, third segment slightly inflated at base, without pit; lengths of last three segments about 26, 11, and 12 units respectively. Antennae dark brown, with sculptured segments. In male, segments 4–11 gradually narrowing, from 11 by 12 to 13 by 8 units in one specimen; 12–15 elongate, about 31, 35, 25, and 23 by 6–7 units respectively, 12–14 binodose, 15 without stylet. In female, segments 4–14 somewhat flask-shaped, forming a practically continuous series, sub-equal, about 12–13 by 7 units; 15 slightly longer, about 16 by 7 units, without stylet. The combined lengths of segments 3–10, 4–10, and 11–15 about 101, 89, and 67 units respectively. *Thorax* almost black, scutum dull, not shining, with silvery pruinescence, anterior angles and roots of wings paler, brownish-yellow. Scutellum yellow, slightly darker at sides; bearing 9 dark bristles and one or two small hairs. Postscutellum almost black. *Wings* unadorned, but at anterior border radial veins infuscated, and the usual clear area free from macrotrichia just beyond end of costa followed by a dark patch of macrotrichia. Macrotrichia numerous, no bare areas along veins. Costa extending less than half length of wing. Second radial cell almost square; not clearly open in female. Fork of *Cu* distal to level of end of costa in both sexes. Halteres with white knobs. *Legs* with femora and tibiae uniformly dark brown, tarsal segments paler, but last 2–3 more or less infuscated. Form of segments and claws normal. T.R. about 2. *Abdomen* blackish. Spermatheca single, well chitinised, sub-spherical, diameter about 37 μ; the duct hardly at all chitinised. Hypopygium of male very dark, in general form similar to that of *Dasyhelea nigricans* C.I. & M. Ninth sternite without bristles, prolonged posteriorly in middle line as conical process. Ninth tergite bearing at each posterior angle a finger-like process, and a small, more ventral, hairy process. Side pieces without any definite projecting process on inner side posteriorly as seen in *D. nigricans*. Claspers (fig. 2A) with small branch near base, much as in *D. jucunda* M. Harpes very asymmetrical, an irregular transverse band, attenuated in middle, and with a long unpaired and not forked process arising from the right side, projecting backwards and curving over aedeagus. Chitinised part of aedeagus H-shaped.

ETHIOPIA: Addis Ababa, 18.iv.1936, 6 ♂♂, 2 ♀♀. In house.

This insect resembles rather closely the West African species *Dasyhelea nigricans* C.I. & M., but apparently the scutellum is yellower and bears rather more bristles. The hypopygium of the male is similar in type to that of *D. nigricans*, but differs in several details, for example, in the form of the clasper which in shape more nearly resembles that of the New Zealand species *D. jucunda* Macfie.

This species is named after Mr. F. de Halpert, who joined our Ambulance and assisted us in our work on behalf of the wounded, in whose house in Addis Ababa the specimens were collected.

Dasyhelea waldiae sp. n.

An almost black species, with yellowish-brown shoulders and scutellum, and halteres with yellowish knobs.

♂. Length of wing, nearly 1·8 mm.; greatest breadth, about 0·5 mm.

Head almost black. Eyes densely hairy. Palpi darkish brown, not very long, the third segment slightly inflated anteriorly, without pit; lengths of last three segments about 22, 9, and 12 units respectively. Antennae blackish, flagellum in the unique specimen with only 12 segments: segments 4–10 gradually narrowing, from about 11 by 15 to 13 by 10 units; 11–14 elongate, about 44, 32, 21, and 35 by (at widest part) 6–7 units respectively, the last segment with a longish stylet. *Thorax* almost black, the scutum with silvery pruinescence, and the shoulders paler, yellowish-brown. Scutellum dull yellowish-brown, bearing a row

of 11 bristles, and one or two small hairs. *Wings* unadorned, but radial veins a little infuscated. Macrotrichia scanty, the bare areas along the veins distinct and wide. Costa extending rather less than half length of wing. First radial cell obliterated; second well formed, slightly longer than broad. Fork of *Cu* at level of base of second radial cell. Halteres with yellowish knobs. *Legs* brown, with the femora, most of the tibiae, the last tarsal segment, and all the joints dark brown. Form of segments and claws normal. T.R. about 2·5. *Abdomen* very dark brown. Hypopygium (fig. 2, B and C) very dark, resembling that of *D. fusca* C.I. & M. Ninth sternite without bristles, not prolonged posteriorly in the middle line. Ninth tergite bearing at each posterior angle a long finger-like process, and a much smaller, ventral, hairy process. Side pieces without projecting processes, normal. Claspers without branches, normal. Harpes (fig. 2, C) similar to those of *D. fusca*, but unpaired process more pointed at its extremity. Chitinised portions of aedeagus appearing as a median pair of processes reaching back to about the level of the middle of the side pieces, with a flange-like process on each side. Membrane joining aedeagus to ninth sternite spiculate.

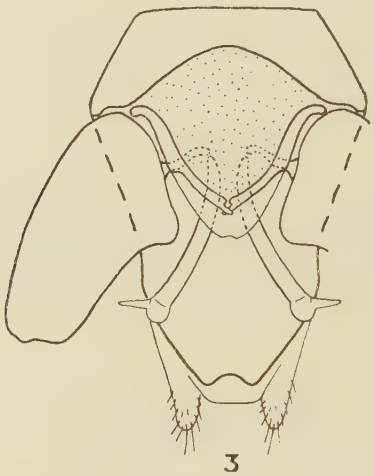

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Fig. 3.—*Stilobezzia lanceloti* sp. n. Ventral view of hypopygium of male.

Ethiopia: Waldia, 16–31.i.1936, 1 ♂. In tent.

This insect is perhaps most nearly related to *D. fusca* C.I. & M., but is darker, and differs in a number of other characters, for example in having more numerous bristles on the scutellum, and in the details of the wing venation and hypopygium.

Stilobezzia lanceloti sp. n.

A dull brown species when dried, with a greyish pruinescence, with almost colourless scutellum and halteres, and yellowish-brown legs. Wings unadorned, with a few macrotrichia. First tarsal segment of hind legs without a basal spine.

♂. Length of wing, about 1·7 mm.; greatest breadth, about 0·5 mm.

Head darkish brown. Eyes bare. Palpi dark brown; third segment nearly as long as fourth and fifth together, hardly at all inflated, with a shallow sensory depression in distal third. Antennae darkish brown, last three segments the darkest. Segments 3–12 with whorls of hairs. Segment 3 with a long stalk and two whorls, about 33 by 10 units; 4–11

sub-equal in length, from about 14 by 7 to 13 by 6 units; 12 about 16 by 6 units; 13–15 more elongate, without whorls, about 39, 47, and 43 by 4–5 units respectively, the last segment without stylet. *Thorax* dull, darkish brown. Scutellum pale, yellowish; bearing 4 bristles, but no small hairs. *Wings* unadorned. Macrotrichia present at tip of wing, along periphery from just beyond end of costa to end of $M1$, along distal half of $M1$, and a few at edge between $M1$ and $M2$. Costa extending about two-thirds length of wing. First radial cell well formed, rhomboidal; second more than twice length of first (internal measurements). Cross-vein and distal part of $R1$ not in line. No bristles on radial veins. Petiole of M longer than cross-vein. Fork of *Cu* only slightly distal to level of cross-vein. Halteres with almost colourless knobs. *Legs* unadorned, almost uniformly brownish-yellow. Form of segments and claws normal. Femora, tibiae, and fifth tarsal segments unarmed. First tarsal segment of hind legs without basal spine. T.R. about 2. *Abdomen* dull brown, with greyish pruinescence. Hypopygium of usual type; ventral view as shown in the figure (fig. 3). Ninth sternite without bristles, somewhat excavated in middle line posteriorly. Ninth tergite bristly, narrowing posteriorly, with a pair of rather large hairy processes. Side pieces not very broad at base. Claspers dark brown, rather irregularly shaped. Harpes highly chitinised, dark brown, blades ending posteriorly in a less chitinised knob resembling the head of a bird with the bill (which is highly chitinised) directed laterally. Aedeagus of the usual form, the rods highly chitinised and overlapping in the middle line posteriorly. Membrane joining aedeagus to ninth sternite spiculate.

Ethiopia: Waldia, 16–31.i.1936, 1 ♂. In tent.

This species, which differs from all others with which I am acquainted in the form of the hypopygium, I dedicate to Mr. Lancelot Simpson who most kindly looked after my affairs for me while I was in Ethiopia.

PARYPHANTA-ARTEN AUS DEM BRITISH MUSEUM (LEP. LIMACODIDAE)

Von Prof. Dr. Martin Hering.

(*Zoologisches Museum Berlin.*)

Communicated by W. H. T. Tams, F.R.E.S.

With Plate 1.

In der Bearbeitung der Limacodidae in Seitz, 1928, *Grossschmett. Erde*, **14** : 453 f. hatte ich unter der Gattung *Paryphanta* Karsch zwei heterogene Gruppen von Limacodidae zusammengefasst, die nicht nur auf Grund morphologischer Unterschiede sondern auch habituell besser als zwei verschiedene Gattungen aufgefasst werden. Anlass zu einer Neubearbeitung der Gattung gab mir eine Sendung, die mir Herr W. H. T. Tams aus dem Material des British Museum machte, in der sich eine grössere Anzahl verschiedener Formen fanden, die nachfolgend beschrieben werden. Die Aufteilung der Gattung ergibt sich nach folgenden Merkmalen :

Paryphanta Karsch.

Fühler des ♂ doppelt kammzähnig, im Endteile nackt, gewöhnlich im letzten Drittel ohne Kammzähne. Palpen kurz, vorgestreckt. Hintertibien mit 2 Sporn-Paaren. Im Vorderflügel entspringt r_2 mit den gestielten r_{3+4} aus einem Punkte oder gestielt; r_5 ist von dem Stiel r_{3+4} deutlich getrennt. Die Adern $m_2 - cu_1$ entspringen etwa in gleichen Abständen um die Hinterecke der Mittelzelle. Im Hinterflügel anastomosiert die *sc* mit dem Zellvorderrande nach dessen Mitte, wurzelwärts von der Anastomose sind aber beide Adern gleichmässig stark chitinisiert erhalten und verlaufen getrennt. *rr* und m_1 sind gestielt.

Genotype : *P. fimbriata* Karsch.

Anilina gen. n.

Von der vorigen Gattung dadurch geschieden, dass die Fühler des ♂ nur einreihig gekämmt sind. Im Hinterflügel anastomosieren *sc* und Zellvorderrand nach der Mitte des letzteren, sind wurzelwärts von der Anastomose verschmolzen und verdickt, so dass ein getrennter Verlauf der beiden Adern wurzelwärts von der Anastomose nicht mehr zu beobachten ist, zumal der basale Teil der *sc* nur noch als Falte vorhanden ist.

Generotype : *A. plebeia* Karsch ; hierher auch *A. tessmanni* Her., *personata* Her., *nubilata* Her.

Die bisher bekannten und die neu zu beschreibenden Arten der echten Gattung *Paryphanta* mögen nun nach der folgenden Tabelle getrennt werden :—

Uebersicht der Paryphanta*–Arten :—*

1. Vorderflügel strohfarben-lehmgelb, mit 2 parallelen braunen Schrägstreifen, der äussere von ihnen geht in die Flügelspitze . . . . . *orbata* Hering.
—. Vorderflügel bräunlichgelb, rötlich bis olivgrün oder grau, mit deutlich dunklerem Wurzelfeld und vielfach solcher Submarginalbinde; zuweilen einfarbig, mit heller Mittelbinde. Selten ist das Wurzelfeld nicht dunkler als die helle Mittelbinde, dann zieht aber die dunkle Submarginalbinde nicht in die Spitze des Flügels, sondern mündet weit vor ihr in den Vorderrand . . . . . 2.
2. Wurzelfeld der Vorderflügel nicht dunkler als die Mittelbinde, die beiden dunklen Querstreifen sind an den zugekehrten Seiten deutlich silberweiss gerandet . . . . . *seydeli* Hering.
—. Wurzelfeld der Vorderflügel immer dunkler als die helle Mittelbinde; ist das ausnahmsweise nicht der Fall, dann ist die dunkle Submarginallinie auch nicht wurzelwärts hell gerandet. . . . . 3.
3. Grundfarbe der Vorderflügel olivgelb, ockerfarben bis rötlichbraun . . 4.
—. Grundfarbe der Vorderflügel (in Wurzelfeld und Submarginalbinde) olivgrünlichgrau bis dunkelgrau, ohne jede rötliche Tönung . . . . . 11.
4. Vorderflügel von rotbrauner Grundfarbe, nur mit heller Mittelbinde (das Saumfeld ist nur schwach dunkler) . . . . . *rufibasalis* Hering.
—. Vorderflügel mit dunklem Wurzelfeld und solcher Submarginalbinde, die durch ein helleres Feld vom Saum getrennt ist, oder wenigstens mit einer schmalen, hellen Linie vor dem Saum . . . . . 5.
5. Schwärzliche Punkte am Saum sind vorhanden; die Submarginalbinde ist unter der Costa und Mitte schwärzlich bestäubt und zerfällt so in 2 Stücke, die weisse Linie vor dem Saum an dieser Stelle eingebogen *biumbrata* Hamps.
—. Beide Stellen schwärzlicher Bestäubung fehlen, die dunkle Submarginalbinde zerfällt nicht in 2 Stücke, die weisse Linie vor dem Saum gleichmässig . . . . . 6.
6. Die rötlichbraune Submarginalbinde der Vorderflügel konvergiert stark mit dem Saum und mündet in die Flügelspitze. Hinterflügel gelb *rufilinea* Beth.-Bak.
—. Die Submarginalbinde der Vorderflügel ist etwa mit dem Saum parallel und mündet in die Flügelspitze, oder die Hinterflügel sind grau . . . . 7.
7. Die dunkle Submarginalbinde ist so breit oder breiter als die vorhergehende helle Mittelbinde . . . . . 8.
—. Die Dunkle Submarginalbinde der Vorderflügel ist deutlich schmäler als die helle Mittelbinde . . . . . 9.
8. Beim Männchen sind die Fühler bis kurz vor das Ende gekämmt (bis $\frac{3}{4}$); Körper kurz und plump, den Innenwinkel der Hinterflügel wenig überragend, der Apex der Vorderflügel stark gerundet . . . . *incisa* sp. n.
—. Fühler beim Männchen höchstens bis $\frac{2}{3}$ oder nur bis zur Hälfte gekämmt. Körper schlank, den Tornus der Hinterflügel merklicher überragend. Apex der Vorderflügel weniger gerundet . . . . . 8*a*.
8*a*. Die dunkle Submarginalbinde der Vorderflügel fast gleichmässig breit, nicht am Vorderrande breiter als am Innenrand . . . . . 8*b*.
—. Dunkle Submarginalbinde der Vorderflügel am Vorderrande viel breiter als am Innenrande . . . . . *similis* sp. n.
8*b*. Aussenrand der dunklen Submarginalbinde in der Mitte deutlich eingeschnürt oder eingebuchtet, Vorderflügel mehr grau erscheinend *tamsi* sp. n.
—. Aussenrand der dunklen Submarginalbinde der Vorderflügel gleichmässig gebogen, nicht eingebuchtet. Grundfarbe lebhaft ockerbräunlich *pseudobisecta* sp. n.

9. Mittelbinde und Wurzelfeld der Vorderflügel gleichmässig hell *basiclara* sp. n.
—. Das Wurzelfeld der Vorderflügel dunkler als die Mittelbinde . . . . 10.
10. Die dunkle Submarginalbinde im Vorderflügel geht allmählich in das etwas hellere Saumfeld über . . . . . *extenuata* sp. n.
—. Dunkle Submarginalbinde scharf abgesetzt vom Saumfeld, meist von ihm durch eine helle Linie getrennt . . . . . *intacta* Hering.
11. Dunkle Submarginalbinde im vorderen Teile mit einem dunkleren, schwärzlichen Fleck . . . . . *maculata* Hering.
—. Dunkle Submarginalbinde von der Costa bis zum Innenrand gleichmässig dunkel gefärbt . . . . . 12.
12. Im Vorderflügel sind die Adern stellenweise weiss bezeichnet, namentlich am Zellhinterrande und Ader 3–5. Grundfarbe der Vorderflügel deutlich braungrau . . . . . *albovenosa* Hering
—. Adern nicht weiss bezeichnet. Besteht hier ein Zweifel, so ist in der hellen Mittelbinde der Teil auswärts von der dunklen Teilungslinie mehr gelblich als der innere Teil . . . . . 13.
13. Die weisse schmale Linie vor dem Saum geht ungefähr dem Saum parallel 14.
—. Die weissliche Linie vor dem Saum fast grade, viel schwächer als dieser gebogen, diesem daher nicht parallel; die dunkle Submarginallinie ist so breit wie das Saumfeld; Wurzelfeld und Saumfeld sind deutlich blässer als die Submarginalbinde . . . . . *rectilinea* sp. n.
14. Saumfeld deutlich heller oder andersartig gefärbt als die vorhergehende dunkle Submarginalbinde. Dunkle Zeichnungen der Vorderflügel olivgrau (zuweilen das Wurzelfeld rötlich). Der äussere Teil der hellen Mittellinie oft gebogen, Hinterflügel meist hellgrau . . . . . 15.
—. Saumfeld nicht merklich heller als der Raum zwischen ihm und der hellen Mittelbinde; der äussere Teil der letzteren praktisch grade. Grundfarbe beider Flügel braun, nicht grau . . . . . 21.
15. Wurzelfeld der Vorderflügel auf dem Zellhinterrand und am Innenrand stark eingeschnürt, ± rötlich getönt, sein Aussenrand dunkler als das übrige Wurzelfeld . . . . . 8.
—. Wurzelfeld am Zellhinterrand wenig, am Innenrand nicht eingeschnürt, nie rötlich . . . . . 16.
16. Die äussere Hälfte der hellen Mittelbinde am Vorderrand wurzelwärts eingebogen oder ganz grade. Dunkles Submarginalband relativ schmal, Wurzelfeld am Zellhinterrand mit deutlicher Einschnitt . . . . . 17.
—. Die äussere helle Mittellinie am Vorderrand saumwärts ausgebogen, das dunkle Submarginalband deshalb vorderrandwärts stärker zugespitzt, auch meist breiter . . . . . 18.
17. Das dunkle Submarginalband ist schmal (in der Mitte weniger als doppelt so breit wie dort das helle Mittelband). Hinterflügel lichtgrau, gegen die Basis heller, dünn beschuppt . . . . . *tenuifascia* sp. n.
—. Dunkle Submarginalbinde breiter (in der Mitte doppelt so breit wie dort die helle Mittelbinde). Hinterflügel braun, dicht beschuppt, basal nicht heller werdend . . . . . *latifascia* sp. n.
18. Helle Mittelbinde der Vorderflügel schmal: der sie teilende dunkle Streif ist so breit wie jede der hellen Teillinien. Hinterflügel hellgrau *angustilinea* sp. n.
—. Helle Mittelbinde breiter: die dunkle Teilungslinie (die zuweilen auch ganz fehlen kann) ist schmaler als jede der hellen Teilungslinien . . 19.
19. Saumfeld der Vorderflügel breiter als bei den folgenden Arten: das dunkle Submarginalband ist an der breitesten Stelle noch unter zweimal so breit als das Saumfeld nach der weisslichen Linie. Helle Mittelbinde steil: die Entfernung von der Wurzel bis zum Bindenaussenrand ist nur 2–2½ mal so gross wie die Entfernung von dort bis zur Flügelspitze an der

Fransenwurzel. Hinterflügel dunkelbraun beschuppt; die das Saumfeld im Vorderflügel begrenzende weissliche Linie wenig deutlich *rectifascia* sp. n.

—. Saumfeld schmaler, das dunkle Submarginalband ist an der breitesten Stelle wenigstens doppelt so breit als das Saumfeld nach der weisslichen Linie. Helle Mittelbinde schräger: die Entfernung von der Wurzel bis zum Aussenrand dieser Binde ist 3–4 mal so gross wie die Entfernung von dort bis zur Flügelspitze. Helle Linie vor dem Saumfeld immer ± deutlich 20.

20. Helle Mittelbinde der Vorderflügel schmal, ohne deutliche dunkle Teilungslinie . . . . . *bisecta* Hamps.

—. Helle Mittelbinde der Vorderflügel breiter, mit deutlicher dunkler Teilungslinie . . . . . *fimbriata* Karsch.

21. Mittelbinde der Vorderflügel breit, jede der hellen Teillinien wenigstens am Innenrande so breit wie die dunkle Teilungslinie zwischen ihnen; die äussere Teillinie ist auffallend mehr gelb als die kreideweisse innere. Kleinere Art, Vorderflügel 6 mm. lang, ihr Saum in der Mitte weniger konvex . . . . . *separata* Karsch.

—. Helle Mittelbinde der Vorderflügel schmäler, der dunkle Teilungsstreifen in ihrer Mitte ist deutlich dicker als jede der beiden durch ihn getrennten Linien, diese beide fast gleichartig weisslich getönt. Vorderrand des Wurzelfeldes stärker weisslich bestäubt, Aussenrand der Vorderflügel viel stärker konvex . . . . . *ugandensis* sp. n.

Beschreibung der vorliegenden Arten:—

A. Arten mit rotbrauner Färbung oder rötlicher Tönung der Vorderflügel.

Paryphanta rufibasalis Hering.

Von dieser von Tendaguru beschrieben Art sind 4 ♂♂ von Nyasaland, xii.–ii. (*S. A. Neave*, 1914–171) vertreten.

Paryphanta basiclara sp. n.

Die einzige der rotbraunen Arten, bei der kein dunkleres Wurzelfeld abgegrenzt ist.

♂: Vorderflügel bräunlich-ockergelb, das Wurzelfeld nicht dunkler; an der Stelle seiner äusseren Begrenzung liegt eine dunkelbraune, schmale Querbinde, die aussen noch schmäler bleichgelb gerandet ist; sie verliert sich bei etwa ¼ des Vorderrandes. Dazu parallel eine etwas hellere braune Submarginallinie, die ganz grade vom Vorder– zum Innenrand geht und etwa doppelt so breit als der helle Mittelstreifen ist. In etwas geringerer Breite ist das Saumfeld dunkel, ohne deutlich hell von der Submarginalbinde getrennt zu sein. Hinterflügel schokoladenbraun. Unterseite der Vorderflügel ebenso, ihr Vorderrand wie die Hinterflügel ockergelb, letztere dicht dunkel gesprenkelt. Körper von der Grundfarbe der Vorderflügel. Vorderflügellänge 8 mm.

♂-Type von Zululand, Lower Tugela, 160 ft., 6.x.02 (*E. D. Reynolds*, 1902–329).

Paryphanta intacta Hering.

Von Transvaal beschrieben, in der Sammlung des British Museum 8 ♂♂ von Cape (94–185), Transvaal (*A. G. Janse*, 1906–216, und *A. J. T. Janse*, 1907–122), Umtali, Mashonaland (*G. A. K. Marshall*, 1901–188) und ein fragliches Stück von Portuguese E. Africa, E. of Mt. Chiperone, 2300 ft. (*S. A. Neave*, 1914–171).

Paryphanta pseudobisecta sp. n.

♂: Steht am nächsten *P. bisecta* Btlr., ist aber schlanker, die Vorderflügel spitzer, am Aussenrand nicht so konvex, länger; der Hinterleib stärker den Tornus überragend und dünner. Die Fühler sind beim Männchen nur bis etwa $\frac{2}{3}$ gekämmt. Wurzelfeld und Submarginalbinde der Vorderflügel heller oder dunkler rotbraun wie bei der verglichenen Art, das Wurzelfeld aussen aber nur mit zwei deutlichen Vorsprüngen, aussen nur sehr schmal schwärzlich gerandet. Hinterflügel opak dunkelbraun. Vorderflügellänge 8 mm.

♂-Type von O. Transvaal, White River (*A. T. Cooke*, im Zoologischen Museum Berlin), im British Museum von ebendort 3 ♂♂, auch von Weenen, Natal (98–152), i.–iii.

Paryphanta rufilinea Beth.-Bak.

Im British Museum von Uganda, Entebbe (*F. J. Jackson*), Type ♂; Katesa, 1 ♂, 16.x.01 (*C. S. Betton*, 1902–99); Elburgon, Railway Sta., 2.vii.03, 1 ♂.

Paryphanta extenuata sp. n.

♂, ♀: Von vorhergehender dadurch unterschieden, dass die dunkle Submarginalbinde im Vorderflügel schmäler als die helle Mittelbinde ist; sie ist ausserdem gegen den Saum hin verwaschen und wenig abgehoben; eine helle Linie im Saumfeld ist nicht sichtbar. Im übrigen ähnelt die Art der *P. bisecta* Btlr., aber das Wurzelfeld ist zwar aussen dunkler, aber nicht ausgesprochen braun begrenzt, die helle Mittelbinde erscheint praktisch ungeteilt, das Saumfeld ist merklich heller als das Wurzelfeld. Von *P. rufilinea* ist die Art sogleich durch die steilere dunkle Submarginalbinde unterscheidbar, die nicht in die Spitze, sondern in den Vorderrand vor derselben mündet. Vorderflügellänge 6–7 mm.

♂-Type von Touba, Ivory Coast (*C. L. Collenette*, 1929–19), vii., ♀-Allotype Côte d'Ivoire (Joicey Coll., 1922–306).

Paryphanta incisa sp. n.

Die Art stellt einen Uebergang zwischen den beiden Gruppen dar, da sie in manchen Stücken mehr rotbraun, in anderen olivfarben ist.

Das Wurzelfeld zeigt 3 nach aussen konvexe Vorsprünge, es ist vor dem Distalende dunkler als basal. Die dunkle Submarginalbinde ist deutlich dunkler als das Saumfeld und von diesem nur durch eine dünne, schwach gebogene, weisse Linie getrennt, die etwa dem Saum parallel geht. 11 ♂♂, 1 ♀.

Type (♂) von Mikesse, Bez. Morogoro (Museum Berlin). 2 ♂♂ 1 ♀ von Dar-es-Salaam (*F. W. H. Migeod*, British Museum, 1926–42), im British Museum.

Diese Art ist in meiner Bearbeitung im Seitzschen Werk fälschlich als *P. bisecta* Btlr. aufgefasst worden.

Paryphanta similis sp. n.

Die Art ist der *pseudobisecta* m. recht ähnlich, unterscheidet sich aber durch das am Vorderrande sehr stark verbreiterte dunkle Submarginalband. Die Grundfarbe ist lebhaft rotbräunlich, das Wurzelfeld schmal schwärzlich begrenzt. Die helle Mittelbinde ist nicht deutlich dunkel geteilt. Hinterflügel hellgrau. Vorderflügellänge 7 mm.

♂-Type von S. Lufonso-River, L. Mweru Distr., 5000 ft., iii.1922 (*T. A. Barns*).

Paryphanta tamsi sp. n.

Die Art ist bald mehr olivgrau, bald mehr ockerig getönt. Die Vorderflügel sind etwas mehr gerundet als bei den verwandten Arten, kennzeichnend ist für sie die Einbuchtung am Aussenrand der dunklen Submarginalbinde, wodurch diese Art mehr *P. biumbrata* Hamps. ähnlich wird, bei dieser ist aber der vordere Teil der Submarginalbinde viel breiter, da die darauf folgende helle Linie unter dem Saum stärker gebogen erscheint, auch geht dort die Einschnürung tiefer. Ich kenne die Art von Hampson nur aus einer mir von Herrn W. H. T. Tams liebenswürdigst übermittelten Photographie der Holotype, so dass vielleicht die Möglichkeit besteht, dass beide nur Formen einer Art sind. *P. tamsi* m. hat hellgraue Hinterflügel und erscheint im ganzen mehr olivfarben als die verwandten Arten. Vorderflügellänge 7 mm.

♂-Type und 5 ♂♂ Paratypen von Natal, Weenen (*H. P. Thomasset*), x., xi.1927. Ich widme die Art Herrn W. H. T. Tams als Dank für die liebenswürdige Unterstützung bei der Bearbeitung dieser schwierigen Gruppe.

B. Arten mit olivgrauen bis braunen Vorderflügeln, stets ohne jede rötliche oder gelbe Tönung.

Paryphanta albovenosa Hering.

Diese von Togo beschriebene Art ist vertreten von Côte d'Ivoire (2 ♂♂ Joicey Coll., 1 ♂, 1 ♀ G. T. B. Baker); N. Nigeria: Lokoja (1 ♂ D. Cator), 2 ♂♂ Zungeru, 15. & 28.iv.1911, 1 ♂ Ilorin, 24.vi.1912, 2 ♂♂ Minna, 2.–11.x.1910 (*Scott Macfie*, 1911–269).

Paryphanta rectilinea sp. n.

Vorderflügel olivgrünlich-grau, im Wurzel- und Saumfeld gleichartig gefärbt, die dunkle Submarginalbinde schmal, ziemlich gleichbreit, erst unter dem Vorderrande verschmälert. Auswärts wird sie durch eine grade, fast weissliche Linie begrenzt, die nicht dem Saum parallel läuft. Einwärts von ihr leigt ein weisslicher Doppelstreifen, der durch eine Linie der Grundfarbe geteilt ist: die äussere helle Linie ist fast reinweiss, die innere mehr gelblich. Hinterflügel dunkelgrau. Vorderflügellänge 7–8 mm. Fühler zur Spitze abnehmend gekämmt, die letzten 15 Segmente ohne Kammzähne. Beim ♀ sind die hellen Querlinien noch matter.

♂-, ♀-Type von Nyasaland, Mt. Mlanje, 3.ii.–19.iii. (*S. A. Neave*, 1914–171).

Paryphanta tenuifascia sp. n.

Vorderflügel heller als bei voriger Art, stärker olivgrünlich getönt. Das Wurzelfeld ist deutlich dunkler als das Saumfeld, namentlich seine äussere Begrenzung, die gegen den Vorderrand allmählich verlöscht. Am Hinterrand der Zelle ist eine Einkerbung, die sich

als hellerer Strahl in das Wurzelfeld fortsetzen kann. Darauf folgt eine weissliche Mittelquerbinde, die ziemlich breit ist; sie ist vor und hinter ihrer dunklen Teilungslinie gleichartig weiss, nicht basal mehr gelblich. Die darauf folgende dunkle Submarginalbinde ist ebenso dunkel wie das Wurzelfeld; sie ist schmal, kaum breiter als die weissliche Mittelbinde und wird aussen von einer stark konvexen und daher dem Saum fast parallelen weisslichen Linie begrenzt. Hinterflügel hellgrau, am Saum dunkler. Vorderflügellänge 8–10 mm.

♂-Type von Budama, Uganda, x. (*G. D. H. Carpenter*), weitere 17 ♂♂ von Uganda: Bugomolo, 24.iv., Butembe (*Hargreaves*), Mabera Forest (*R. A. Dummer*), Gondokoro (*W. E. Reymes-Cole*). Ausserdem von Kibwezi (*S. A. Neave*), Kitale, Lumbwa (*G. W. Jeffery*), iii.–v., viii. Als fraglich hierher gehörig ziehe ich ein ♂ von Abyssinien mit dunkelbraunen Hinterflügeln.

Paryphanta latifascia sp. n.

Vorderflügel ausgesprochen braun, ohne olivgrüne Tönung, das schmale Saumfeld nur ganz unmerklich anders gefärbt und etwas grauer und weniger braun. Das Wurzelfeld ist am Hinterrande der Zelle etwas eingeschnitten, von dort setzt sich ein weisslicher Strahl ± weit in das Wurzelfeld fort. Die darauf folgende helle Mittelbinde ist schmal, schmal dunkel geteilt, die innere Linie weisslich, die äussere etwas gelblich, am Vorderrand wurzelwärts diffus verbreitert. Die braune Submarginalbinde ist wenigstens doppelt so breit wie die helle Mittelbinde, in der Mitte am breitesten, nach vorn verschmälert. Die weissliche Linie, die das Saumfeld abgrenzt, ist stark konvex und etwa dem Saum parallel. Hinterflügel dunkel graubraun. Vorderflügellänge 7–8 mm. Fühler wie bei der vorigen Art.

♂-Type von Uganda, Katesa, 16.x. (*C. S. Betton*), 3 ♂ von ebendort, auch von Kilossa (*G. L. R. Hancock*), 22.iii.; Madi, v.; West Nile, viii.–ix. (*G. D. H. Carpenter*).

Paryphanta angustilinea sp. n.

Habituell ist die Art der *P. tenuifascia* m. ähnlich, aber dunkler olivgrau, unterschieden durch die schmälere, helle Mittelbinde, bei der der innere Teil weisslich, der äussere mehr gelblich ist, während bei der verglichenen Art beide Hälften weisslich sind. Die dunkle Submarginalbinde ist merklich breiter, mehr als doppelt so breit als die helle Mittelbinde, nach vorn plötzlich, gegen den Innenrand mehr allmählich verschmälert.

♂-Type und Paratypen von Distr. of the Great Craters, Tanganyika Terr., ii.–iii. (*T. A. Barns*).

Paryphanta rectifascia sp. n.

Steht ganz nahe *P. fimbriata* Karsch, unterscheidet sich aber in der weisslichen Mittelbinde, die weiter wurzelwärts am Vorderrand beginnt. Die innere Seite dieser weissen Binde liegt etwa in der Flügelmitte, bei der verglichenen Art merklich auswärts von derselben. Die Hinterflügel sind dunkel braungrau, bei *P. fimbriata* Karsch hell weisslichgrau.

♂-Type von Transvaal (*C. H. Read*, 1907–262).

Paryphanta ugandensis sp. n.

Die Art steht ganz nahe der *P. separata* Karsch, sie besitzt aber längere und relativ breitere Flügel, deren weisse Mittelbinde viel zierlicher und feiner ist. Die Vorderflügel sind etwas dunkler braun.

♂-Type und 8 Paratypen von Gondokoro, White Nile (*W. E. Reymes-Cole*, 1908–62).

Paryphanta separata Karsch.

Von Westafrika beschrieben, im British Museum 26 ♂♂ von: Westafrika (*Dudgeon*, 1908–71), Tangani, Kolumbi Creek, E. Afr., viii (*Jackson*); Nyasaland, Mt. Mlanje, Luchenya R., Ruo Valley, S.W. of Chilwa, xi, i.–iii. (*S. A. Neave*, 1914–171); Dar-es-Salaam (*Swinhoe*).

Paryphanta bisecta Btlr.

Type ♂, B.E. Africa, Samburu, 14.xi.1896 (*C. S. Betton*).

Paryphanta fimbriata Karsch.

Von Westafrika beschrieben, im British Museum 5 ♂♂, 2 ♀♀, viii.–xi.: Côte d'Ivoire; N. Nigeria, Minna (*Scott Macfie*); N'Dalla Tando, N. Angola (*W. J. Ansorge*).

Die Typen aller Arten befinden sich, soweit nicht anders angegeben, im British Museum (Natural History).

Es ist nicht ohne weiteres ersichtlich in welchen Fällen es sich bei den vorstehend beschriebenen Formen um eigene Arten oder nur um geographische Unterarten handelt, da die Genitalien keine eindeutige Auskunft in dieser Gruppe geben. Die künftige Untersuchung der ersten Stände wird erst eine sichere Beurteilung in dieser Hinsicht ermöglichen.

Herr W. H. T. Tams hat die prächtigen Photographien zu den besprochenen Arten geliefert; ihm spreche ich auch an dieser Stelle meinen wärmsten Dank dafür wie auch für die anderweitige Unterstützung und Förderung meiner Arbeit aus.

Plate 1.

Fig. 1. *Paryphanta rufibasalis* Hering, ♂, Nyasaland, Mt. Mlanje, 23.ii.1913 (*S. A. Neave*).
2. *Paryphanta basiclara* Hering, Holotype ♂, Zululand, Lower Tugela, 160 ft., 6.x.1902 (*E. D. Reynolds*).
3. *Paryphanta intacta* Hering, ♂, Transvaal, Pretoria, 31.x.1906 (*A. J. T. Janse*).
4. *Paryphanta pseudobisecta* Hering, Paratype ♂, E. Transvaal, White River, i.1907 (*A. T. Cooke*).
5. *Paryphanta rufilinea* B.-Bak., Holotype ♂, Uganda, Entebbe (*F. T. Jackson*).
6. *Paryphanta extenuata* Hering, Holotype ♂, Ivory Coast, Touba, 1750 ft., 7.vii.1926 (*C. L. Collenette*).
7. *Paryphanta rectilinea* Hering, Holotype ♂, Nyasaland, Mt. Mlanje, 19.iii.1913 (*S. A. Neave*).
8. *Paryphanta tenuifascia* Hering, Holotype ♂, Uganda, Budama, x.1927 (*G. D. H. Carpenter*).
9. *Paryphanta latifascia* Hering, Holotype ♂, Uganda, Katesa, 16.x.1901 (*C. S. Betton*).
10. *Paryphanta angustilinea* Hering, Holotype ♂, Tanganyika Territory, District of the Great Craters, ii.–iii.1921 (*T. A. Barns*).
11. *Paryphanta separata* Karsch, ♂, W. Africa (*Dudgeon*).
12. *Paryphanta separata* Karsch, ♂, Nyasaland, Mt. Mlanje, Luchenya R., 20.ii.1914 (*S. A. Neave*).
13. *Paryphanta bisecta* Butler, Holotype ♂, B.E. Africa, Samburu, 14.xi.1896 (*C. S. Betton*).
14. *Paryphanta biumbrata* Hamps., Holotype ♂, Natal, Durban, bred ii.1902 (*G. F. Leigh*).
15. *Paryphanta rectifascia* Hering, Holotype ♂, Transvaal (*C. H. Pead*).
16. *Paryphanta ugandensis* Hering, Holotype ♂, Gondokoro, White Nile (*W. E. Reymes-Cole*).
17. *Paryphanta fimbriata* Karsch, ♀ (det. Martin Hering, 1926), N. Nigeria, Minna, 29.viii.1910 (*Scott Macfie*).
18. *Paryphanta albovenosa* Hering, ♂, Côte d'Ivoire.
19. *Paryphanta similis* Hering, Holotype ♂, Lake Mweru district, E. Luvua Valley, S. Lufonso River, 5000 ft., iii.1922, Rainy Season (*T. A. Barns*).
20. *Paryphanta tamsi* Hering, Paratype ♂, Natal, Weenen, x–xi.1927 (*H. P. Thomasset*).
21. *Paryphanta tamsi* Hering, Holotype ♂, Natal, Weenen, xi.1927 (*H. P. Thomasset*).
22. *Paryphanta incisa* Hering, Paratype ♀, Dar-es-Salaam, 1925 (*F. W. H. Migeod*, Brit. Mus. E. Africa Exped.).

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Paryphanta **spp. in the British Museum.**